147 Categorization of patients by "Leeds criteria" for *Pseudomonas aeruginosa* infection in cystic fibrosis center in Republic of Macedonia

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Patients with cystic fibrosis were defined by Lee definition for *Pseudomonas aeruginosa* infection in four categories. "Chronic" when more than 50% of the preceding 12 months were PA culture positive, "intermittent" when ⩽50% of the preceding 12 months were PA culture positive, "free of PA" with no growth of PA for the previous 12 months, having previously been PA culture positive, or "never infected", when PA had never been cultured. The aim of the study was to identify the CF patients in adequate groups and asses relationship with clinical, immunological and lung function parameters.

Methods: The study included 76 children and adolescents (61 males) with mean age 8, 7±6, 9 SD years, who regularly attend the Cystic Fibrosis Center in R. Macedonia. Clinical and demographic data was collected as near as possible to the end of the 12-month period.

Results: The "chronic" group (18% of the patients) had significantly worse Shwachman-Kulczycki (SK) and Crispin-Norman chest x-ray scores than the "intermittent" (31%) and "free" (29%) categories ($p < 0.008$). We didn't find significant correlation for % predicted FEV1 value and BMI between the groups ($p = 0.6$). "Chronic" patients were significantly associated with a positive, and "never patients" with a negative PA antibody result ($p = 0.05$).

Conclusions: Previous definitions may over-estimate the prevalence of chronic PA infection in CF patients.

148 *Pseudomonas aeruginosa* infection: utility of microbiological, PCR-based and serological techniques

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Within 2004–2006 we had studied the utility of microbiological, molecular genetic and serological techniques for the early detection of *Pseudomonas aeruginosa* (PA) and Burkholderia cepacia (BC) at our centre. 224 patients were examined using microbiological and PCR techniques, combined with specific anti-PA antibodies (ELISA).

Cases: (a) PA negative (PAN, n = 43), (b) PA intermittent positive (PAI, n = 40), (c) PA chronic colonization (PAC, n = 42), (d) PA free (PAF n = 42) and (e) BC-positive cases (n = 57). Markedly lower FEV_1 was found in the oldest BC group (69.1+25.4% p.v.) and in PAC cases (73.6+26.1). This is significantly less than in PAN (95.9+17.2) and PAF (87.8+20.2) cases. PAI differ significantly only from the BC group (84.7+21.3), while in BC, PAC and PAF groups deterioration in adults was observed. During the study frequency of analyzed sputa has increased, thus more patients were classified as PAC. On the other hand, the age of PAI patients has increased from 10.7+5.7 yrs to 13.6+6.1 ($p < 0.05$) and lung function has not deteriorated. In PA microbial cultivation correlated with PCR positivity ($p < 0.001$). As expected, most of the discordant results were within the PAI group. Correlation between serology and cultivation/PCR positivity was strong ($p < 0.0001$). Concordant results were found only in PAC and PAN groups. In the PAN group only negative or borderline antibody titres were found. Negative antibody titres did not exclude PA infection. In summary, we proved that regular/frequent sputum examinations, supplemented with serological testing, facilitate early pathogen detection and prevent lung function deterioration.

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149 Early warning signs of bacterial exacerbation in cystic fibrosis patients

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One of the goals of the multidisciplinary team of the CF Association of Minas Gerais, Brazil is to preserve lung tissue from bacterial exacerbation in cystic fibrosis patients.

The objective of this study is to find out if there are clues that bacterial exacerbation are coming on. To our knowledge there are no studies to identify the early warning signs among CF patients. We want to know if these patients have early warning signs before installation of fever and/or breathing difficulties.

The study was carried out by telephone interview among the 300 registered CF patients in the Association, by a physiotherapist student who did not know the patients and she just asked two questions. First question was related to the use of antibiotics during the year of 2006. The second question was asked if patients or their parents have noticed something different before the patients have fever.

Until now there were 57 patients that have used antibiotics during 2006 and have fever, representing only 17% of the total registered patients.

The preliminary results of this questionnaire pointed out these early warning signs*: get tired and quiet (16/57); increase cough (11/57); lack of appetite (11); sticky sputum (11); sleepy (4); headache (3); get excited, nervous (3); crybaby (2); dry mouth (1); pale (1); clammy (1); difficult to walk (1); red eyes (1); itchy throat (1) and abdominal pain (1). (Number of patients listed in parentheses.)

It is helpful to know these early warning signs. We assume that the earlier the diagnosis of exacerbation is made, the easier it is to reverse the problem and less destruction of the lung tissues.

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150 Prevalence of nontuberculous mycobacteria in a Czech Cystic Fibrosis centre

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Background: Patients with Cystic Fibrosis (CF) are at high risk for acute and chronic airway infections. We inquire sputum for possible bacteriological infection in CF patients routine every month. Nontuberculous mycobacteria (NTM) are potential pathogens in CF patients and they may worse chronic pulmonary disease and nutritional failure. Czech population is obligatory vaccinated against tuberculosis. BCG vaccination partly protects versus NTM.

Aim: The aim of the present work of this study was to assess the prevalence of NTM among CF patients.

Methods: They were 55 CF patients cured in a regional CF centre in University hospital in Brno in 2006, 36 children and 19 adults We collected sputum or aspirate from trachea and processed for mycobacterial smear and culture. Special cultivation technique was used in CF sputum.

Results: In opposite from others CF centres we did not find any positive finding for NTM in our CF patients.

Conclusion: The prevalence of NTM in CF is low. Non findings in our group can indicate that the studied group of patients is a small one or that BCG vaccination may prevent NTM colonisation in our patients also. An assessment for NTB minimally ones a year is involved in guidelines for CF care in Czech Republic in this year.

We dare to argue that BCG vaccination can be a profit for CF patients.